Title (en)

SURFACE CONDITION MEASUREMENT APPARATUS

Publication

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Application

EP 92119607 A 19921117

Priority

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- JP 33009291 A 19911119
- JP 33009391 A 19911119
- JP 35009591 A 19911210

Abstract (en)

[origin: EP0543326A2] Radiated light with a specified wavelength from a material (21, P, 201) is detected and a first parameter corresponding to the emissivity ratio is obtained from the detection signal. Since the emissivity takes on different values according to the condition of the surface of the material, the first parameter changes depending on the surface condition of the material. There is a correlation between a physical value indicating a condition of the material surface and the first parameter. The correlation remains equivalent even if a second parameter corresponding to the physical value is used instead of the physical value itself (for example, an optical physical value such as reflectivity and absorptivity, the thickness of a film formed on the material surface, the surface roughness, and the degree of galvannealing). As an example of the parameter corresponding to the physical value, there is the logarithmic ratio between emissivities (ln epsilon a/ln epsilon b) corresponding to the temperature in the vicinity of the surface. Therefore, a second parameter can be obtained on the basis of the correlation and a physical value can be obtained. When the emissivity or logarithmic emissivity ratio is used as the second parameter, the temperature in the vicinity of the material surface can be obtained from the second parameter and the detection signal. <IMAGE>

IPC 1-7

G01N 21/47; G01J 5/60; G01B 11/30

IPC 8 full level

G01J 5/60 (2006.01); G01J 5/00 (2006.01)

CPC (source: EP US)

G01J 5/60 (2013.01 - EP US); G01J 2005/0074 (2013.01 - EP US)

Citation (search report)

- [A] US 4881823 A 19891121 - TANAKA FUMIO [JP], et al
- [A] US 4974182 A 19901127 - TANK VOLKER [DE]
- [A] US 5011295 A 19910430 - KRISHNAN SHANKAR [US], et al
- [A] FR 2477706 A1 19810911 - NIPPON STEEL CORP [JP]
- [A] REVIEW OF SCIENTIFIC INSTRUMENTS vol. 62, no. 2, 1 February 1991, pages 392 - 402 KHAN ET AL. 'NONCONTACT TEMPERATURE MEASUREMENT'
- [A] TANAKA ET AL. 'IEEE INSTRUMENTATION AND MEASUREMENT TECHNOLOGY CONFERENCE 1989' 25 April 1989 APPLICATION OF A NEW RADIATION THERMOMETRY METHOD TO GALVANNEALED AND COLD ROLLED STEELS
- [A] HIGH TEMPERATURES HIGH PRESSURES vol. 18, 1 September 1986, pages 617 - 625 HIERNAUT ET AL. 'SUBMILLISECOND SIX WAVELENGTH PYROMETER,ETC.'

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DE FR GB

DOCDB simple family (publication)

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